JAPANESE [JP,2001-277629,A]

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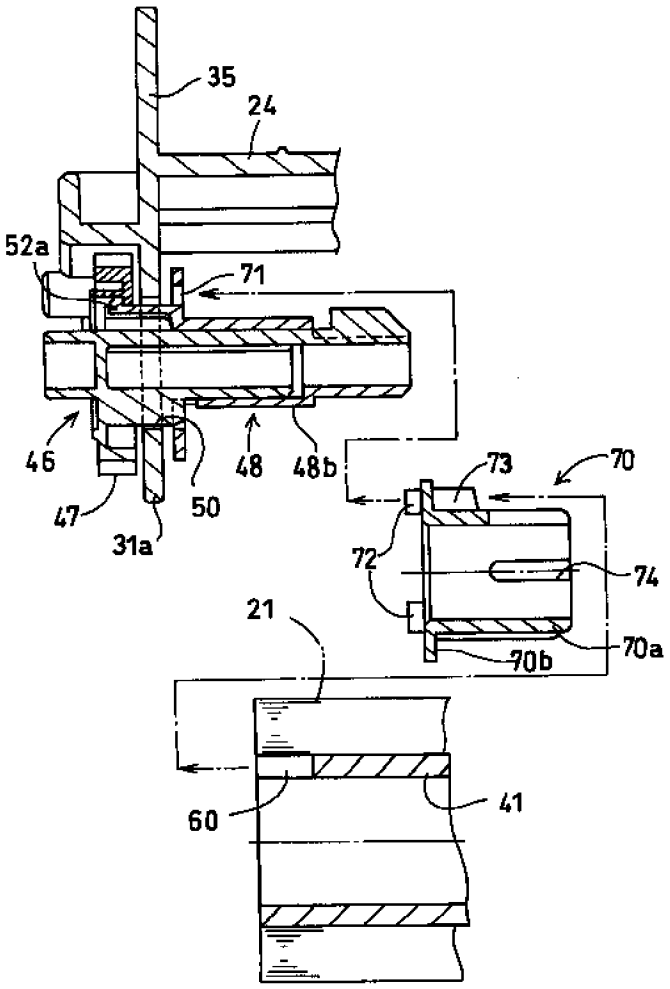
DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the structure of the ink sheet cartridge provided with the exchangeable broad ink sheet for using it for image forming devices, such as a printer and a facsimile machine, and its ink sheet set for exchange.
[0002]
[Description of the Prior Art]When printing on recording forms, such as a regular paper, using a thermal printer, an ink ribbon cartridge is usually used from the ease of exchange, and the simplicity of handling. And when a thermal printer is a line printer, the broad ink sheet is used. This conventional kind of ink sheet cartridge, For example, as shown in JP,6-81749,U, JP,10-193732,A, etc., in order to exchange ink sheets to a cartridge body, the supply side spool of an ink sheet and the rolling-up side spool could be

Drawing selection Representative draw



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supported pivotable, respectively, and it was constituted, enabling free attachment and detachment.
[0003]The 1 side of said supply side spool and a rolling-up side spool is equipped with the gear part for transmitting power from the main part side of an image forming device, and rotating each spool from the former.
As what is called a torque transmission part for rolling round imposing a moderate tension on said ink sheet, While providing the notch groove opened at the end of the core tube which rolls round an ink sheet, the spool provided with the gear part of said driving side is equipped with the engaging projection which gets into said notch groove, and this engaging projection is set to said notch groove.
And incorporating an ink sheet cartridge was performed so that said gear part might be engaged to the transmitting part (gear) by the side of an image forming device body.
[0004]
[Problem(s) to be Solved by the Invention]By the way, required maximum torque changes according to the thickness, the width dimension, and the quality of a web material of an ink sheet which should be used. However, whenever it changed said size and the sheet material, when the inside diameter and outside diameter size of the core tube were changed, the diameter of the portion which fits into the inside diameter of said core tube by the side of the spool by the side of an ink sheet cartridge also had to be changed at every time, and it had a problem that a manufacturing cost became high.
[0005]On the other hand, if the core tube which wound the ink sheet of the other company to said spool can fit in, There was a problem of an image forming device stopping operating normally -- it becomes impossible to demonstrate the normal printing performance which can be demonstrated if the ink sheet of the other company will be used and a regular ink sheet is used accidentally etc..
[0006]This invention was proposed in view of said conventional problem, and is ****. The purpose is to provide the ink sheet set for exchange applicable to the ink sheet cartridge and it which were prevented from using the core tube which is not [that torque transmission is possible and] regular even if it changed the diameter of the core tube according to the thickness and the width dimension of an ink sheet, the quality of a web material, etc.

[0007]
[Means for Solving the Problem]In order to attain said purpose, an ink sheet cartridge of an invention indicated to

claim 1, In an ink sheet cartridge which equips a both sides board of a cartridge body with a supply side core tube of an ink sheet, and the rolling-up side core tube via a spool with which each both the right and left ends are equipped enabling free attachment and detachment enabling free rotation, A tubed intermediate adapter is inserted between said at least one spool and an end of said one core tube, and this intermediate adapter is equipped with the 1st engaging projection that engages with a locking hole established in a flange by the side of said spool, and the 2nd engaging projection that engages with a notch engagement groove by the side of a core tube.

[0008]And in the ink sheet cartridge according to claim 1, the invention according to claim 2 a rolling-up side spool, While it constitutes so that it may escape from inside and outside via a boss drilled by side plate of said cartridge body and a collar-head shank and the 1st rotating member with a transmission-tooth vehicle may be made to engage with impossible, two or more locking holes are suitably established in a flange in said shank at an interval along with a circumferencial direction.

[0009]The invention according to claim 3 is an ink sheet set for exchange which consists of an ink sheet, a supply side core tube of this ink sheet, and a rolling-up side core tube, and in an ink sheet cartridge of a statement, is constituted at either claim 1 or claim 2 so that wearing is possible.

[0010]An ink sheet set for exchange of the invention according to claim 4 consists of an ink sheet, a supply side core tube of this ink sheet, and a rolling-up side core tube, and said rolling-up side core tube has an inside diameter and a notch engagement groove into which the intermediate adapter according to claim 1 gets.

[0011]

[Embodiment of the Invention]Next, the desirable embodiment of this invention is described concretely, referring to drawings.

[0012]The sectional side elevation of the facsimile machine 1 with which drawing 1 equipped with the ink sheet cartridge 20, Drawing 2 The important section expansion sectional side elevation of the set part of the ink sheet cartridge 20, As for the top view of the ink sheet cartridge 20, and drawing 4, the exploded perspective view of the parts of an ink sheet cartridge and drawing 9 of the perspective view of the ink sheet cartridge 20 and drawing 8 are [drawing 3] the perspective views of the spool connecting part by the side of rolling up.

[0013]First, an approximate account is carried out about the structure of the facsimile machine 1 as an image forming device of this invention. The facsimile machine 1 of this embodiment reads a picture etc. in the manuscript 8, . Receive the facsimile information which it transmitted to other facsimile machines via communication lines, such as a telephone line, by making the image data into facsimile information, and was transmitted from other facsimile machines via communication lines, such as a telephone line, and form the picture in the recording form 4. It has a function as a printer which forms a picture according to the data in response to the printing data transmitted via radio, such as a printer cable or infrared rays, from a personal computer, a word processor besides a function, etc. as a usual facsimile machine.

[0014]The receiver which is not illustrated is arranged at the 1 side of the body casing 2 of the facsimile machine 1. In the upper surface of the body casing 2 of upper surface open state, focusing on the rotational fulcrum 6a of the back end, the wrap arm-top-cover object 6 is pivoted by the top back end of the body casing 2 so that vertically and rotationally moving is possible. The navigational panel 3 which has the key switch 3a, the liquid crystal display 3b, etc. is formed in the upper surface front part side of the arm-top-cover object 6. It is constituted so that this navigational panel 3 may also open a front side upward and can be rotated, in order to remove the manuscript 8 on the occasion of the poor feeding of the manuscript 8, etc. The feeding base 5 for laminating and laying the recording form 4 in the upper surface rear of the body casing 2, after the shape of slanting facing down has stood is established rotatable to the rear of the arm-top-cover object 6, and the upper surface order halfway part of the body casing 2 is equipped with the manuscript stand 7 removable.

[0015]In the body casing 2, the feed roller pair 9 for conveying the manuscript 8 from said manuscript stand 7 to the downward position of said navigational panel 3, the original cover object 11 arranged to its stuck type image scanner section (CIS) 10 and read station up side, and the paper ejecting roller pair 12 are arranged.

[0016]In the body casing 2 of the lower part of said feeding base 5, it has the feeding part 14 which consists of separating pad 16 grade energized by means of a spring by the feed roller 15 and its upper peripheral surface for conveying one sheet of recording form 4 from the feeding base 5 at a time.

[0017]Under this feeding part 14, the platen 17 of the shape

of a roller as a printing unit, The thermal head 22 on the printing stand 19 energized with the spring 18 toward the undersurface of this platen 17 and the stowage 13 for the ink sheet cartridge 20 arranged so that a cross direction may be straddled to this printing stand 19 are arranged (refer to drawing 1).

[0018]The ink sheet cartridge 20 in said stowage 13, It is arranged by the supply side sheet spool 25 of the ink sheet 21 at the rear side of the body casing 2, and the rolling-up side sheet spool 26 becomes the front side of the body casing 2, and the supply side sheet spool 25 side in a high position. It is arranged in the shape of anteversion (letter of a hips rise) so that the rolling-up side sheet spool 26 side may serve as a low position. Therefore, the lower part of said stowage 13 will be located in the undersurface rear side in the body casing 2, and large space is conjointly formed in the undersurface rear of the body casing 2 with the composition of anteversion arrangement of the ink sheet cartridge 20. A deer is carried out and the substrate 29 for control for performing operation of the facsimile machine 1 etc. is arranged down this space 13, i.e., said stowage.

[0019]The ink sheet 21 wound around the front rolling-up side sheet spool 26 from the supply side sheet spool 25 passes through the crestal plane of the thermal head 22 and the tension object 23 made from a leaf, and results in the lower peripheral surface side of the rolling-up side sheet spool 26. At this time, the inked surface of the ink sheet 21 is on the upper surface. The recording form 4 which laps with the upper surface (inked surface) of the ink sheet 21, After being printed in the printing unit in which the platen 17 and the thermal head 22 polymerize, The upper surface of the diaphragm 24 which has a function of the conveying chute formed in the upper part by the side of the rolling-up side sheet spool 26 in the ink sheet cartridge 20 is passed, and paper is delivered ahead of the body casing 2 via the paper ejecting roller pair 28. It is arranged so that the upper chute part 27 of the conveying chute of the shape of a rib of two or more sheets projected downward may be prolonged from the conveyance upstream to the downstream on both sides of the platen 17 in the undersurface of said arm-top-cover object 6, It is constituted so that the recording form 4 can be passed between the diaphragms 24 in said ink sheet cartridge 20.

[0020]On the other hand, the ink sheet 21 is crooked downward in the crestal plane of said tension object 23, passes the undersurface side of the diaphragm 24, and it is

constituted so that it may be rolled round by the lower circumference side of the rolling-up side sheet spool 26.
[0021]Next, the composition of the ink sheet cartridge 20 concerning this invention is explained in full detail, referring to drawing 3 - drawing 11.
[0022]This ink sheet cartridge 20 is constituted by the cartridge body 30, the ink sheet 21, the supply side spools 36 and 37 of the right-and-left couple as the supply side sheet spool 25, and the rolling-up side spools 38 and 39 of the right-and-left couple as the rolling-up side sheet spool 26.
[0023]Said each spools 36, 37, and 39 are shanks with a flange respectively fitted in the both ends of the core tubes 40 and 41 for winding the ink sheet 21 removable, for example, it is formed in one in injection molding of a synthetic resin material, etc., and only one spool 38 is constituted combining two or more parts.
[0024]Next, the composition of the cartridge body 30 as a cartridge body is explained with reference to drawing 3 - drawing 8. The side plates 31a and 31b of the right-and-left couple extended from a sheet supply side to the rolling-up side as the cartridge body 30 surrounds the both sides outside of the ink sheet 21, The piece 32 of an arm top cover of the both sides straight side connected so that the winding part upper part of the supply side of the ink sheet 21 may be covered to the side plates 31a and 31b of this couple, Similarly the side plates 31a and 31b of the couple constitute between the upper parts by the side of rolling up of the ink sheet 21 from the wrap diaphragm 24, and it is made by injection molding in one with a synthetic resin material. Therefore, the part surrounded with the piece 32 of a supply side arm top cover of the right-and-left straight side, the diaphragm 24 by the side of rolling up, and the both sides board jointing pieces 31a and 31b, It becomes a window hole part which the ink sheet 21 exposes, the roller-like platen 17 will face from this window hole part upper part, and the printing stand 19, the thermal head 22, and the tension object 23 will face from the lower part of a window hole part (refer to drawing 1 and drawing 2). the pterygium from the both sides end of said diaphragm 24, or the side plates 31a and 31b of a right-and-left couple -- the knob parts 35 and 35, such as **, protrude upward.
[0025]And to said each side plates 31a and 31b, the part of said rolling-up side left spool 38 is removed, The axial support groove part 33 of the end open sand mold with which the supporting spindle part in each outer shaft 44 of

the supply side right spool 37 and the rolling-up side right spool 39 or the supply side left spool 36 fits in loosely, respectively is formed (refer to drawing 6 and drawing 8).

By the open groove 34 by which notch formation was carried out at each side plates 31a and 31b so that it might form successively in the axial support groove part 33 and might extend outward [radius]. When pushing in each outer shaft 44 (supporting spindle part) upward in the state where the axis abbreviated-crosses to said axial support groove part 33, the width dimension between the lower open groove edges of each axial support groove part 33 is extended elastically, but. It comprises a free state so that each outer shaft 44 (supporting spindle part) may not fall out to each axial support groove part 33.

[0026]The ink sheet 21 forms an ink layer in whole one side of a double-width resin film, and as shown in drawing 8, it is wound around the cylindrical core tubes 40 and 41, such as one pair of products made of paper. As the recording form 4 is made to meet the ink layer of the ink sheet 21, it puts by the platen 17 and the recording surface of the thermal head 22 which is a line printer, The picture of one line is formed at a time in the recording form 4 by energizing to the heating resistor of the thermal head 22 according to image data.

[0027]It is identical shape as it is indicated in drawing 8 as the supply side right spool 37 which fits into each right end (seeing from the discharge side of the recording form 4 right-hand side) of the core tube 40 of a supply side, and the core tube 41 by the side of rolling up, and the rolling-up side right spool 39, It is constituted by the cylindrical outer shaft 44 of the byway as the internal cylinder part 42 which fits into the right end section inside diameter of said core tube 40 (41), the flange 43 of a major diameter, and a supporting spindle part arranged to the cartridge body 30 mentioned later enabling free rotation.

[0028]The supply side left spool 36 which fits into the left end of the core tube 40 of a supply side, The internal cylinder part 42 with the engaging pawl 42a which fits into the left edge part inside diameter of said core tube 40, and engages with a notch groove, It resembles the flange 43 of a major diameter, the supporting spindle part (not shown) arranged to the cartridge body 30 later provided and mentioned on the outside of this flange 43 enabling free rotation, and the gear part 45 provided in the outside, and is constituted more (refer to drawing 8).

[0029]On the other hand, the rolling-up side left spool 38

which fits into the left end of the core tube 41 by the side of rolling up, The 1st rotating member 46 with transmission-tooth vehicle 47 with which falls out to the boss 50 of the one side plate 31a of the cartridge body 30, and impossible is equipped and that is arranged at the outside of said one side plate 31a, It is constituted by the shank 48 with the flange 48a connected with this 1st rotating member 46 from the inside of said one side plate 31a. And between the base 48b and the core tube 41 in said collar-head shank 48, the tubed intermediate adapter 70 which carries out injection molding of the synthetic resin material is inserted. The cylinder part 70a to which the intermediate adapter 70 in this embodiment fits in just between the outer diameter of said base 48b, and the inside diameter of the core tube 41, The flange 70b of the major diameter which can **** on the side of the flange 48a which protrudes on said base 48b, The 1st engaging projection 72 of 2 apodemas which engage with two or more locking holes 71 which are the side of this flange 70b and were drilled in the side of said flange 48a with the constant interval along the hoop direction, It protrudes on the periphery of said cylinder part 70a, and is formed in one of the 2nd engaging projection 73 that fits into the notch groove 60 in the core tube 41 (refer to drawing 13 (a) and drawing 13 (b)).

[0030]It inserts in the cylinder part 70a to the core tube 41, two or more long end slots 74 are formed in an axial direction so that it may be easy to sometimes bend and may become it, and the projected rim is formed in the periphery of the cylinder part 70a so that it may be easy to insert in and may become to the core tube 41.

[0031]Drawing 10 (a), drawing 10 (b), drawing 10 (c), and drawing 10 (d), The 1st rotating member 46 of synthetic resin materials, such as a product made of Nylon, is shown, the internal cylinder part 46a is formed in the inner diameter part of the transmission-tooth vehicle 47 for a long time along an axis, and the cylindrical elastic body 51 prolonged along said axial direction is formed in the 1 side notch 46c of this internal cylinder part 46a in one. Although the locking claw 51a is formed outward [radius] in one at the free edge side of this elastic body 51, This elastic body 51 and locking claw 51a are not indispensable requirements in this invention, and when the core tube 41 of a thin inside diameter is used, they engage and release the core tube 41 concerned to the engagement hole (not shown) made to penetrate radially.

[0032]In accordance with the circumference, the flabellate

base 46b of 3 rates is established in the radius outside of said internal cylinder part 46a. Between the bases 46b of said 3 rates, the fitting hole 53 of approximately rectangular shape into which the tip claw part 52a of the three engaging bodies 52 in the shank 48 with the flange 48a gets, respectively is drilled, and the step 53a as an engagement part is formed in the periphery side of each fitting hole 53. It protrudes on said shank 48 and the side which counters, and the locating lug 54 prolonged radially is formed in the base 46b of said 3 rates in one.

[0033]Drawing 11 (a), drawing 11 (b), and drawing 11 (c), From the tubed base 48b, the composition of the shank 48 with the flange 48a of synthetic resin materials, such as a product made of Nylon, is shown, and the disc-like flange 48a projects to a radius outside direction, and at the end of said base 48b. The arc shaped cross section inside 48c of a proposal whose radius is a little small is prolonged in the axial direction, and said elastic body 51 and its tip locking claw 51a may penetrate said base 48a and the inner diameter part inside [48c] a proposal to an axial direction. From the radius halfway part of said flange 48a, the three engaging bodies 52 have projected to said base 48b and the opposite direction. Since said locking hole 71 is formed using the mold omission hole for carrying out ejection formation of each of this engaging body 52, the manufacturing cost of a metallic mold can be reduced.

[0034]The tooling holes 55 into which each locating lug 54 in said 1st rotating member 46 fits are drilled in the base portion of said base 48b and the flange 48a. The position of the radial direction of the locking hole 71 in said flange 48a is larger than the radius position of said tooling holes 55, and is between the locating positions of the circumferencial direction of each tooling holes 55.

[0035]It is a rolling-up [in / by the above-mentioned composition / the cartridge body 30] side, In an embodiment, from the outside of the left side board 31a shown in drawing 4, as shown in drawing 9, the base 46b of the 1st rotating member 46 is inserted to the boss 50, from the inside of said side plate 31a, the flange 48a of the shank 48 is made to approach, and the three engaging bodies 52 are inserted in said boss 50. And each tip claw part 52a of each engaging body 52 is inserted in each fitting hole 53 by the side of the inside diameter of the transmission-tooth vehicle 47 in said 1st rotating member 46. By this, each tip claw part 52a engages with the step 53a by the side of the periphery of each fitting hole 53, and it is united as the

rolling-up side left spool 38, escapes from said boss 50 and by extension, the cartridge body 30, and becomes impossible.

[0036]In the state where it was united as the rolling-up side left spool 38, the periphery in the doubling part of the base 48b of the shank 48 and the base 46b of 3 rates in the 1st rotating member 46 becomes cylindrical, and it becomes a positioning part of the rotation center axis of the transmission-tooth vehicle 47 and the rolling-up side spool 38 to the boss 50.

[0037]Above-mentioned composition explains the gestalt which equips said cartridge body 30 with the ink sheet set for exchange. That by which the ink sheet set for exchange wound the new ink sheet 21 around said supply side core tube 40, It is a set with the rolling-up side core tube 41, and near [predetermined] the end part of this core tube 41, said intermediate adapter 70 may be fixed beforehand, and the intermediate adapter 70 may be prepared as an option article. The width dimension of the ink sheet 21 has a preferred thing which abbreviation etc. spread on the size between the both ends of the core tube 41 and to do. The end of the new ink sheet 21 is beforehand attached with the periphery of said core tube 41 with adhesive tape etc. And it escapes from said 1st rotating member 46 and the shank 48 with the flange 48a in the part of the predetermined boss 50 of the cartridge body 30, impossible is equipped, and the rolling-up side left spool 38 is constituted (refer to drawing 14).

[0038]And the intermediate adapter 70 is inserted between the end (left end) of the core tube 41 by the side of rolling up, and the shank 48 in said rolling-up side left spool 38, and the core tube 41 is inserted in said shank 48. in this case, an intermediate adapter may be beforehand boiled and inserted in the base 48b in the shank 48, and the 1st engaging projection 72 may be fitted in to the locking hole 71 of the flange 48a.

[0039]On the other hand, the right end of said core tube 41 is inserted and equipped with the rolling-up side right spool 39. As shown in drawing 8, the supply side left spool 36 and the supply side right spool 37 are inserted in the both ends of the core tube 40 of a supply side, respectively, and they are equipped with them.

[0040]As mentioned above, since one spool (rolling-up side left spool 38) falls out to the cartridge body 30 among four spools 36, 37, 38, and 39 and impossible is equipped, For example, it becomes clear that the arrangement sides of the

transmission-tooth vehicle 47 are either right or left of the cartridge body 30 in the aforementioned embodiment, When a user exchanges for the new ink sheet 21, errors, such as the direction of [when attaching the both ends of the core tubes 40 and 41 with each spool], decrease, and exchange of the ink sheet 21 can be performed promptly and easily.
[0041]And since it will be in the state where the intermediate adapter 70 is inserted only in the end of the one core tube 41, The ink sheet cartridge 20 of this invention cannot be equipped with the rolling-up side spool of the other company which uses the core tube 41 with which an inside diameter does not suit said intermediate adapter 70, The misuse that image forming devices, such as a facsimile machine which these people manufactured, are accidentally equipped with the ink sheet 21 of the other company where quality differs is lost, and troubles, such as aggravation of the print quality by not using the regular ink sheet 21 and a printing defect, can be prevented.
[0042]In the above-mentioned state, said rolling-up side right spool 39, the supply side left spool 36, and the supply side right spool 37 are inserted in the axial support groove parts 33, 33, and 33 in the cartridge body 30, respectively, and the core tube 41 by the side of rolling up is rotated so that the ink sheet 21 may not be slackened.
[0043]When the ink sheet cartridge 20 of the above-mentioned composition is set to the stowage 13 of the facsimile machine 1, by a given attitude, it is supported by the part of the both sides boards 31a and 31b of the cartridge body 30 as a cartridge body, etc., and At this time. While inserting in the shank (not shown) which protruded on said body frame side which the inner diameter part of the outer cases 44 and 44 in the rolling-up side right spool 39 and the supply side right spool 37 does not illustrate, The gear part 45 and the transmission-tooth car 47 in the supply side left spool 36 and the rolling-up side left spool 38 gear on the gear for power transmission (not shown), respectively, and. The inner diameter part of the outer shaft in the supply side left spool 36 and the rolling-up side left spool 38 is inserted in the shank (not shown) which protruded on the axial direction flexibly from said body frame side. As a result, the supply side sheet spool 25 and the rolling-up side sheet spool 26 may rotate smoothly.
[0044]By the print command in the navigational panel 3, the output of the print command command from the computer of the exterior which is not illustrated, or reception of the facsimile information from other facsimile machines. If said substrate 29 for control operates and printing (record) work

is started, the feed roller 15 will rotate and carry out a feed start first. If prescribed distance conveyance is carried out and the platen 17 is approached after detecting the paper sensor which the tip of the recording form 4 does not illustrate, Power is transmitted to the gear part 45 and the transmission-tooth car 47 in the platen 17 and the ink sheet cartridge 20, and the 1st rotating member 46 and the shank 48 with the flange 48a are one, and and between this shank 48 and the core tube 41, Since the intermediate adapter 70 provided with the 1st engaging projection 72 and the 2nd engaging projection 73 is inserted, the torque of the transmission-tooth vehicle 47 to the rolling-up direction of the predetermined ink sheet 21 can be transmitted to the core tube 41 (refer to drawing 15). As a result, conveyance of the ink sheet 21 and delivery of the recording form 4 are started, and printing by the thermal head 22 which is the printing unit is performed.

[0045]Immediately after printing the ink sheet 21 and the recording form 4 in the state where it was inserted by the platen 17 and the thermal head 22, The ink in the ink sheet 21 melts according to the data (character) of printing in generation of heat by the heating resistor of the thermal head 22, it is reflected to the recording form 4, and the state where the ink sheet 21 adhered to the surface of the recording form 4 by subsequently ink being cooled continues. It is crooked downward greatly and the conglutination in the ink to the recording form 4 is canceled in the part of the crestal plane 23a of the tension object 23 in order to be involved in the periphery lower side side of the rolling-up side sheet spool 26, as shown the ink sheet 21 in drawing 2. On the other hand, the recording form 4 with which the undersurface turns into a printing face is appearing in the upper surface of said diaphragm 24, and conveyed, and the conveying path of the recording form 4 concerned and the ink sheet 21 can separate it certainly. The recording form 4 can be prevented from dipping up the tip (conveyance downstream side) of the recording form 4 of a free state, and moving downward by making it crooked downward, at the tip (side near the crestal plane 23a of the tension object 23) of the diaphragm 24.

[0046]And the intermediate adapter 70 set by the thickness and the width dimension of the ink sheet 21 to be used, and the diameter (inside diameter) of the core tube 41 used according to the construction material of the ink sheet 21, It can set up suitably, and since the intermediate adapter 70 can be renewed according to the ink sheet 21 to be used, the

user should just equip an image forming device with the purchased ink sheet 21 (that from which said core tubes 40 and 41 and the intermediate adapter 70 became a set) for exchange as it is.

[0047]When the recording form 4 in the state where the printing face was placed upside down will pass if many projected rims 24a of the book are formed in the upper surface of the diaphragm 24 in the shape of the straight side along the transportation direction as shown in drawing 5, a printing face is not ground widely and the dirt of the recording form 4 by adhesion of ink can be lessened.

[0048]According to the above-mentioned embodiment, although this invention was applied to the facsimile machine, of course, it cannot restrict to this and can use for various image forming devices, such as a printer, a copying machine, or apparatus provided with two or more of those functions.

[0049]

[Effect of the Invention]The ink sheet cartridge of the invention it was indicated to claim 1 that explained above, In the ink sheet cartridge which equips the both sides board of a cartridge body with the supply side core tube of an ink sheet, and the rolling-up side core tube via the spool with which each both the right and left ends are equipped enabling free attachment and detachment enabling free rotation, A tubed intermediate adapter is inserted between said at least one spool and the end of said one core tube, and this intermediate adapter is equipped with the 1st engaging projection that engages with the locking hole established in the flange by the side of said spool, and the 2nd engaging projection that engages with the notch engagement groove by the side of a core tube.

[0050]Therefore, since the intermediate adapter provided with the 1st engaging projection and the 2nd engaging projection which engage with each between the spool and the core tube is inserted, the torque to the rolling-up direction of a predetermined ink sheet can be certainly transmitted to a core tube. And since it will be in the state where can set up an intermediate adapter suitably according to the thickness and the width dimension of the ink sheet to be used, and the diameter (inside diameter) of the core tube according to the construction material of the ink sheet, and an intermediate adapter is inserted only in the end of one core tube, The ink sheet cartridge of this invention cannot be equipped with the rolling-up side spool of the other company which uses the core tube with which an inside

diameter does not suit said intermediate adapter, The misuse that image forming devices, such as a regular facsimile machine, are accidentally equipped with the ink sheet of the other company where quality differs is lost, Can prevent troubles, such as aggravation of the print quality by not using a regular ink sheet, and a printing defect, or, The effect that that it becomes impossible to demonstrate the normal printing performance which can be demonstrated if a regular ink sheet is used etc. can cancel the trouble of an image forming device stopping operating normally is done so.

[0051]And in the ink sheet cartridge according to claim 1, the invention according to claim 2 a rolling-up side spool, While it constitutes so that it may escape from inside and outside via the boss drilled by the side plate of said cartridge body and a collar-head shank and the 1st rotating member with a transmission-tooth vehicle may be made to engage with impossible, two or more locking holes are suitably established in the flange in said shank at an interval along with a circumferencial direction.

[0052]Thus, since one of the rolling-up side spools falls out to a cartridge body and it has become impossible, In addition to the effect by the invention according to claim 1, it is bewildered by the work to which a regular user attaches said supply side spool and a rolling-up side spool with a right location and direction, or, It becomes exchangeable [an ink sheet] easily, without being delayed, and mistaking the attachment side to the ink sheet cartridge of the side provided with the transmission-tooth vehicle for rotating each spool is lost, and the effect that transmitting power from the main part side of an image forming device can be performed normally is done so.

[0053]Since the 1st engaging projection is engaged to the locking hole drilled by the flange in said shank, Since the radius (distance) from the center of rotation of an engagement position can be enlarged and power of the transmitting torques can be lessened, the effect that it is not necessary to make board thickness of a flange hot superfluously, and it can be made compact is done so.

[0054]The invention according to claim 3 An ink sheet and the supply side core tube of this ink sheet, Since it is an ink sheet set for exchange which consists of a rolling-up side core tube and constitutes in the ink sheet cartridge of a statement at either claim 1 or claim 2 so that wearing is possible, Cannot equip the ink sheet cartridge of the other company, but it mistakes in image forming devices, such as a regular facsimile machine, The misuse of being equipped

with the ink sheet of the other company where quality differs is lost, and the effect that troubles, such as aggravation of the print quality by not using a regular ink sheet and a printing defect, can be prevented is done so.
[0055]The ink sheet set for exchange of the invention according to claim 4 consists of an ink sheet, a supply side core tube of this ink sheet, and a rolling-up side core tube, and said rolling-up side core tube has the inside diameter and notch engagement groove into which the intermediate adapter according to claim 1 gets.
[0056]Therefore, the ink sheet set for exchange of the other company which uses the core tube with which an inside diameter does not suit said intermediate adapter, The misuse that image forming devices, such as a regular facsimile machine, are equipped accidentally is lost, and the effect that troubles, such as aggravation of the print quality by not using a regular ink sheet and a printing defect, can be prevented by use of the ink sheet of the other company where quality differs is done so.

[Translation done.]